Grade 1 Standards and Learning Activities

SCIENTIFIC THINKING AND INQUIRY

1.1. Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations.

Students:

1. Observe, describe, draw, and sort objects as a way of isolating and categorizing some of their properties.
2. Investigate and make observations to seek answers to questions.
3. Recognize and demonstrate what people can learn about plants and animals by observing them closely over a period of time.
4. Use tools, such as rulers and magnifiers, to investigate the world and make observations.
5. Measure the length of objects having straight edges in centimeters or non-standard units to the nearest unit.
6. Demonstrate that magnifiers help people see small features of objects.
7. Describe and compare objects in terms of number, shape, texture, size, mass, color, and motion.
8. Write brief informational descriptions of a real object, person, place, or event using information from the observations.

Examples

Students use sieves of different mesh sizes to separate coarse and fine materials in a soil sample (1.1.1).

Students use physical properties of objects to sort them into two or more categories, such as by color, texture, or hardness. They change the categories to sort a new set of objects and explain the sorting rules to another student (1.1.1).

Students investigate why different plants live in the cracks of the sidewalk, on corners, in fields, and in different areas around the school (1.1.2).

Students adopt selected trees near their classroom or in their neighborhood and observe, record, and draw the seasonal changes to the trees during the school year (1.1.3).

Students select the appropriate tools to determine the temperature of a liquid; the length, height, and depth of a box; and the heaviest block out of three (1.1.4).

Students measure a pencil, a block and the edge of the table with (nonstandard) units of linked paper clips and with a ruler showing inches (1.1.5).

Students study skin, fingers, nails, and eyes of classmates with magnifiers (1.1.6).

Students identify characteristics shared by naturally occurring rocks and manmade concrete (1.1.7).

Students write a descriptive comparison of their observations of the Washington Monument and the Lincoln and Jefferson memorials (1.1.8).

EARTH SCIENCE

1.2. Broad Concept: The Earth is composed of land, air, and water. As a basis for understanding this concept,

Students:

1. Recognize and explain that water, rocks, soil, and living organisms are found on the Earth's surface.
2. Investigate and explain that air is a mixture of different gases that surrounds us and takes up space, and whose movement we feel as wind.
3. Observe and measure that the sun supplies heat and light to the Earth and is necessary for most life.

Examples

Students explore different containers of soil taken from a number of areas around their school. They identify and record findings about the texture of the soil, the earthworms, soil organisms, and insects that they observe within the soil with the help of magnifiers (1.2.1).

Students design and build (with support from the teacher) tools (a wind sock and weather vane) to show wind direction (1.2.2).

Students observe the varying motion of smoke that comes from a candle that has been blown out (1.2.2).

Students test what happens when they put a windshield reflector in place and when they take it off in terms of the solar heating of a car (1.2.3).

PHYSICAL SCIENCE

1.3 Broad Concept: The motion of objects can be observed, measured, and changed. As a basis for understanding this concept,

Students:

1. Observe and describe that the way to make something move (faster or slower or in a different direction) is by giving it a push or a pull, which is called a *force.*
2. Explain that the greater the applied force, the greater the change in the motion of the object.
3. Demonstrate and observe that magnets supply a force that can be used to make some things move without touching them.
4. Recognize and demonstrate how things near Earth fall to the ground unless something holds them up (i.e., they are subject to the force of gravity).

Examples

Students explore the different methods that can be used to make objects move on a table and under water, such as using a string to pull an object, or a ruler to push an object (1.3.1).

Students choose the most effective methods for pushing or pulling an object on a table and under water. Then, they vary the forces given to each of those methods (1.3.2).

Students play "Go Fish" with a ring magnet tied to the end of a string. Students see if they can pick up any of the objects on the floor, including paper clips, pencils, erasers, crayons, small scissors, and paper. They also try to make a chain of metal objects, picking them up one by one (1.3.3).

PHYSICAL SCIENCE (CONTINUED)	
	Students drop objects of different masses from the same height and observe how their falls are similar or different (1.3.4).

LIFE SCIENCE	

1.4. Broad Concept: Different types of plants and animals inhabit the Earth. As a basis for understanding this concept,

Students:

1.	Explain that most living things need food, water, and air.
2.	Observe and describe that there can be differences, such as size or markings, among the individuals within one particular plant or animal group (e.g., maple trees, zebras). Variation is a normal characteristic of many kinds of living things.
3.	Observe and explain that animals eat plants and/or other animals for food.
4.	Recognize that animals (including humans) and plants are living things that grow, reproduce, and need food, air, and water.
5.	Identify the external features that local plants and animals have (such as those found in schoolyards or in city neighborhoods) that enable them to survive in their environment.

Examples	*Students allow a plant to wilt without sunshine and water for days, and then they supply those conditions to see how the plant rejuvenates (1.4.1).*
	Students wipe floors or sinks with pieces of boiled potatoes. One potato is sealed in a plastic bag; the other is allowed air and moisture. They compare the growth of fungus and bacteria one week later (1.4.1).
	Students compare and contrast fish in the classroom (e.g., guppies, goldfish, and betas) and display the similarities and differences on a chart (1.4.2).
	Students gather diet information on various animals (e.g., lions, zebras, gorillas, seals, snakes) during a visit to the zoo and return to create a chart of what different animals eat (1.4.3).
	Students choose an animal native to the Washington, DC, area (including humans) and research its habitat needs. Students make a class "big book" or a mural of what each of their chosen animals need to survive, including food, water, and shelter (1.4.4).